

Beware of Rapture of the Deep

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Repeated dives have led to several recreational diving mishaps reported to the Naval Safety Center during the past five years. These occurred because divers either lacked experience and professional knowledge, or ignored safe-diving practices. To prevent these mishaps, divers must understand and use lessons learned during diving courses that lead toward a certificate such as PADI (Professional Association of Diving Instructors) or NAUI (National Association of Underwater Instructors). In this article in our series on safe diving, we explore another hazard of recreational diving: nitrogen narcosis, or “rapture of the deep.”

This phenomenon was discovered in the 1930s when divers experienced euphoric and intoxicating feelings as they dove into deeper waters. Scientists linked the strange effects to nitrogen in the air that divers breathe under high pressure. These conditions occur because nitrogen acts like an anesthetic and as such initially “dulls” the senses, becoming progressively more debilitating with increasing air pressure.

When you breathe air under pressure, the inert nitrogen of the air diffuses into the various tissues of your body. This process continues and increases with the depth and duration of the dive. At approximately 100 feet, excess nitrogen is absorbed into the brain and interferes with the central nervous system. The more nitrogen present in the brain, the greater is the loss of performance. The results are frightening. You don’t think clearly and make poor decisions. You become uncoordinated, and your mood and behavior change. As depth increases, the problems get worse.

This narcosis effect poses a significant danger to divers because it might cause them to make decisions that place them at risk: A diver might not recognize a problem, or may not be able to respond to it. The greatest hazard of nitrogen narcosis is a total disregard for personal safety, which is identifiable when a diver acts abnormally. Divers suffering from nitrogen narcosis have been known to remove their regulator mouthpiece, or to swim to an unsafe depth without regard for decompression sickness or available air supply. This lapse in performance and inability to perceive danger is the primary reason for setting depth limits on scuba dives.

When you make dives of 100 feet or deeper, be careful and be certain you are trained and certified to dive to that depth. Nitrogen narcosis affects every diver regardless of experience, and once it starts, you may not even know you are impaired.

Personal error, lack of diving knowledge, and complete disregard for safe-diving practices are major contributors to most recreational, scuba diving mishaps. Don’t be a statistic: Review books and notes gathered while earning your diving certificate, and make sure you understand the reasons why diving rules are in place. Be aware of the hazards of diving and prepare thoroughly for the next time you enter the water. 🌊

The author was a chief engineman (surface warfare/diver) assigned to the Naval Safety Center as a diving and salvage analyst when he wrote this article. Send comments or questions about this article to afloat@safetycenter.navy.mil.